

report more than that Kimmeridge clay has been discovered in Sussex, and that this clay is very thick.

AN interesting geological discovery has been recently made during excavations for a new tidal basin at the Surrey Commercial Docks. On penetrating some 6ft. below the surface, the workmen everywhere came across a subterranean forest bed, consisting of peat with trunks of trees, for the most part still standing erect. All are of the species still inhabiting Britain; the oak, alder, and willow are apparently most abundant. The trees are not mineralised, but retain their vegetable character, except that they are thoroughly saturated with water. In the peat are found large bones, which have been determined as those of the great fossil ox (*Bos primigenius*). Fresh-water shells are also found. No doubt is entertained that the bed thus exposed is a continuation of the old buried forest, of wide extent, which has on several recent occasions been brought to the daylight on both sides of the Thames, notably at Walthamstow in the year 1869, in excavating for the East London Waterworks; at Plumstead in 1862-3, in making the southern outfall sewer; and a few weeks since at Westminster, on the site of the new Aquarium and Winter Garden. In each instance the forest-bed is found buried beneath the marsh clay, showing that the land has sunk below the tidal level since the forest flourished.

We have received a "Catalogue of the publication of the U.S. Geological Survey of the Territories, F. V. Hayden, Geologist in Charge." The catalogue covers twenty pages, and although the publication extends only from 1867, they already form quite a large library of reports, monographs, catalogues, &c., relating to all branches of the geology, natural history, meteorology, and other points of the extensive region which is being surveyed. The publications of the survey, we believe, Dr. Hayden is willing to send to any societies, libraries, or persons engaged in active scientific investigation who may desire them; those who do should communicate with Dr. Hayden, U.S. Geologist, Washington, D. C. (U.S.) Dr. Hayden is desirous of securing by exchange the publications of foreign countries in geology, palæontology, and natural history generally, to aid in the formation of a library of reference for the use of the Survey, and he hopes that all persons or societies who receive the publications of the Survey will aid him in this matter.

VOL. IV. of the second series of the *Mémoires* of the Royal Society of Science of Liège, contains only three papers, one of them a mere note of two pages on a new species of *Lepidotus*, *L. melimonti*, by Dr. T. C. Winkler. The other papers are long treatises, one by Dr. E. Candèze, being a "Revision of the Monograph of the Elateridæ" (218 pp.), and the other a treatise "On the Calculus of Probabilities," by the late A. Meyer, published from the MSS. of the author by F. Folie (446 pp.)

MR. J. WOOD-MASON, of the India Museum, Calcutta, has lately directed attention to the presence of a chain of superorbital bones in the wood partridges (*Arboricolie*), similar to that recorded by Mr. W. K. Parker in the tinamous.

THE fourth number of the *Bulletin de la Société Impériale de Naturalistes de Moscou* contains papers on entomology, botany, geology, &c., by M. V. Motschoulsky, M. A. Petrovsky, M. H. Trautschold, and others, in the French and German Languages.

THE Cincinnati Society of Natural History has lately received a bequest of \$50,000 from Mr. Charles Bodman, of that city. The gift is absolute and without conditions.

A LARGE meteor was observed at Niort (Deux-Sevres), on August 19, at 8.20 P.M. Although the moon was quite full, it was a magnificent spectacle. It made its appearance in the zenith, lasted thirty seconds, and disappeared in the south-east

at an altitude of sixty degrees above the horizon. It must have been seen from other parts of France, but no record has come under our notice.

A CHAIR of Organic Chemistry has been created in the Faculty of Sciences of Paris.

THE additions to the Zoological Gardens during the past week include two Kinkajous (*Cercoptes caudivolvulus*) from British Honduras, presented by Mr. James Wickin; a Central American Agouti (*Dasyprocta punctata*), two Brown Gannets (*Sula fusca*) from Costa Rica, presented by Mr. J. C. Hussey; a Woodford's Owl (*Syrnium woodfordi*) from Natal, presented by Mr. W. E. Oates; a Purple-capped Lory (*Lorius domicella*) from Moluccas, presented by Mr. T. P. Medley; a Mexican Guan (*Penelope purpurascens*) from Central America, presented by Mr. A. Warrington; two Gordon's Terrapins (*Platemys gordonii*) from Trinidad, presented by Mr. Devonish; a Tiger (*Felis tigris*) from India, a White-thighed Colobus (*Colobus bicolor*) from W. Africa, a West Indian Agouti (*Dasyprocta antillensis*) from St. Vincent, deposited; a Blotched Genet (*Genetta tigrina*), and two Crested Pigeons (*Ocyphaps lophotes*) bred in the Gardens.

SCIENTIFIC SERIALS

THE *Naturforscher* for July contains the following among other papers:—On the distribution of land and water in Northern Europe during the ice-period, by K. Pettersen.—On the diffusion of gases through thin layers of liquid, by Franz Exner.—On Helmholtz's theory of vowels, by E. von Quanten.—On the influence of the surface of di-electric bodies upon their action at distances, by Romich and Fajdiga.—On electrodes which cannot be polarised, by A. Oberbeck.—On the changes of colour in an alcoholic solution of cyanine, by El. Borscow. Cyanine is the blue colouring matter of the flowers of *Ajuga reptans* and *A. pyramidalis*.—On the determination of alcohol in wine, by M. Malligand.—On the action of a weak acid upon the salts of a stronger, by H. Hübner and H. Wiesinger.—On the influence of the season upon the skin of embryos, by Herr Dönhof.—On the action of electricity of high tension upon liquids, by G. Planté.—On the motion of the imbibition water in wood and in the vegetable cell, by Julius Wiesner.—On a simple means to find the poles of a rod magnet, by F. Müller.—On the analysis of Japanese bronzes, by E. J. Maumené.—On the nutrition of the animal body by peptone, by A. Gyergyai and P. Plosz.—On the conducting of electricity by flames, by F. Braun.—On the fauna of the Caspian Sea, by O. Grimm.—On the action of lime upon the germinating process of *Phaseolus multiflorus*, by J. Böhm.—The solubility of sodic nitrate and its hydrate, by A. Ditte.—The electric conduction resistance of air, by A. Oberbeck.—Influence of chlorine upon the nutrition of plants, by W. Knop.—On some experiments with disinfectants, by Herr Erismann.—Distinction between chemical and physiological ferments, by A. Müntz.—On the time of the disappearance of the ancient Fauna from the Island of Rodriguez, by A. Milne-Edwards.—Application of the tuning-fork to electric telegraphs, by P. La Cour.—On the climate at the Lower Jenissei, by W. Köppen.—Temperatures and specific gravity of the water of the German Ocean, by H. A. Meyer.—On the diffusion of moist towards dry air, by L. Dufour.—On the condensation of water in the soil, by A. Mayer.—What influences determine the sex of the hemp plants? by Fr. Haberlandt.

Transactions of the Academy of Science of St. Louis (U.S.), vol. iii. No. 2.—This part contains the following papers:—By Dr. C. V. Riley: "Hackberry Butterflies, Description of the early stages of *Apatura lycaon*, Fabr., and *Apatura herse*, Fabr., with remarks on their Synonymy;" "On the Oviposition of the Yucca Moth;" "Description of two new Subterranean Mites;" "Descriptions and Natural History of two Insects which brave the dangers of *Sarracenia variolaris*;" "Description of two new Moths." "Notes on the genus *Yucca*," by G. Engelmann; "On the Well at the Insane Asylum, St. Louis County," an account of a geological section, by G. C. Broadhead, who also contributes a paper "On the occurrence of bitumen in Missouri;" "Results of Investigations of Indian Mounds," by J. R. Gage; "Catalogue of Earthquakes in 1872-3," by R. Hayes; "On the Forms and Origin of the Lead and Zinc Deposits of S.W.

Missouri," by Dr. A. Schmidt; "On the *Terebratula mormonii*," by Jules Marcou; "On Climatic Changes in Illinois—its Causes," by A. Sawyer.

Annali di Chimica applicata alla Medicina, July.—The more important papers in this part are:—On some preparations from *Eucalyptus globulus* and *E. amygdalinus*, by G. Righini.—On soluble phosphate of lime, or hydrochloro-phosphate of lime, by G. Tarantino.—On a glycerine solution of salicylic acid, by Prof. S. Zinno.—On the hydrate of croton-chloral, by Dr. Weill.—On the aqueous solution of nitrous oxide, by Prof. Ritter.—On veratrine, by Lepage.—On the ozonisation of the air in unhealthy rooms, by Dr. Leuder.—On a green colour free from poison, by Prof. Casali.—On the function of wine in nutrition, by Bouchardat.—On diphtheria, by Dr. G. Tamborlini.—On a remedy against hydrophobia, by Jitzki.—On the reactions of cod-liver oil, by Buchheim.—On mineral waters in their relation to chronic diseases, by Durand Fardel.

SOCIETIES AND ACADEMIES

VIENNA

Imperial Academy of Sciences, June 10.—On some mechanical effects of the electric spark, by E. Mach.—On the different solubility of different planes of the same crystal, and the connection of this phenomenon with some general principles of science, by Prof. Pfaunder.—On the boiling points of chloride of calcium solutions of different concentration, by the same.—On the latent melting heat of sulphuric bihydrate, by the same.—On the Pyrrhulina species of the Amazon River, and on a new Bryconops species, by Dr. F. Steindachner.—On the pretended dependence of the wave-lengths from the intensity of light, by Prof. F. Lippich.—Determination of the orbit of planet (roo) Hecate, by Dr. J. E. Stark.—On the theory of the functions of three variables, by Prof. M. Allé.—On a new remedy against Phylloxera (ethylsulphocarbonate of potash), by Dr. Ph. Zoeller and Dr. E. A. Grete.—Dr. L. Löwy recommends salicylic acid for the same purpose.—Further researches on the molecular theory, by Dr. A. Handl.—On the determination of the mechanical equivalent of heat, by J. Puluj.

June 17.—Ichthyological researches, by Dr. Steindachner.—On some determined integrals, by Prof. L. Gegenbaur.—On the earthquake observed on June 12 in the vicinity of Vienna, by Prof. E. Suess.—On the conducting of heat by gases, by Prof. Stefan.—Meteorological observations made at Hohe Warte, near Vienna.

June 24.—On the determination of nitrogen in albuminates, by Dr. L. Liebermann.—On the quantities of nitrogen and albumen present in human and in cows' milk, by the same.—On the origin of the acacia gum, by Dr. J. Möller.—On alluvial territories, by Dr. A. Boué.—On a new method to use Böttger's sugar test, by Prof. Brücke.—On the action of chlorine upon solutions of sodic citraconate and sodic mesaconate, by Th. Morawski.—On the tannic acids of the oak, by Dr. J. Oser.—On the manner in which guano is formed, by A. Habel.

July 8.—On a new form of Fresnel-Arago's interference experiments with polarised light, by E. Mach and W. Rosicky.—On acoustic attraction and repulsion, by Dr. V. Dvorak.—On the elastic after-effects from torsion of steel wires, by Dr. J. Finger.—Some experiments on the magnetic effects of rotating conductors, by Dr. J. Odstrcil.—On the conversion of acids of the series $C_nH_{2n-2}O_2$ into such of the series $C_nH_{2n}O_2$, by Dr. G. Goldschmidt.—Theoretical kinematics, by F. Reuleaux.—On the influence of pressure and draught on the thermal coefficients of the expansion of bodies, and on the relative behaviour of water and caoutchouc, by C. Puschl.—On gentisine, by Herr Hlasiwetz and Dr. Habermann.—On glutaminic acid, by Dr. Habermann.—On the structure of the spinal ganglia, by Herr Holl.—On the Adriatic Annelida, by Dr. E. von Marenzeller.—Researches on artificial misformations in hens' eggs, by Dr. Szymkiewicz.

PARIS

Academy of Sciences, Aug. 16.—M. Frémy in the chair.—The following papers were read:—Meridian observations of the minor planets, made at Greenwich Observatory (transmitted by the Astronomer Royal) and at Paris Observatory during the second trimester of the year 1875, communicated by M. Leverrier; the planets observed were Nos. 7, 25, 8, 82, 93, 53, 54, 108, 55, 23, 110, 72, 62, 68, 74, 128, 113, 26, 45, 29, 88, and 64.—Remarks by M. Leverrier on the lately discovered

planets 144 and 145.—On the structure of the ovum and of the seed of Cycadææ, as compared with that of different fossil grains of coal deposits, by M. Ad. Brogniart.—Some remarks by M. Chevreul on a historical note relating to J. B. van Helmont, *à propos* of the definition and of the theory of a flame by M. Melsens.—Ninth note on the electric conductivity of bodies which are only moderate conductors, and on the electric polarisation of minerals, by Th. du Moncel.—A note by M. F. Tisserand, on the observations of shooting stars on Aug. 9th, 10th, and 11th last.—On the reducing action of hydriodic acid at low temperatures upon ethers proper and on mixed ethers, by R. D. Silva.—Synthetical researches on the uric group, by M. E. Grimaux (second paper).—A note by M. Cornu, on the presence of Phylloxera galls, spontaneously developed on European vines.—M. Vinot then presented an instrument to the Academy, which he calls *sideroscope* and, which enables any person, however ignorant of astronomy, to find easily all constellations and the principal stars.—Note on a new method of giving proper signals at sea, by M. Trève.—On the action of copper and its derivatives on the animal organism, by MM. Ducom and Burg.—On an acid obtained from wine, which turns the plane of polarisation to the right, by M. Maumené.—Analysis of the gases given off by the soil on the island of St. Paul, by Ch. Velain.—On Blaes's globes, and on a discovery made by the same in 1600, of a variable star in the constellation of Cygnus, by M. Baudet.—Fourth note by M. J. M. Gauguin on the process of magnetisation.—On some new singing flames, by M. C. Decharme.—Researches on tempered glass, by MM. V. de Luynes and Ch. Feil.—On some double metallic sulphocarbonates, by M. A. Mermet.—On a proper reaction by which to recognise sulphocarbonates in solution, by the same.—On the active part in the seeds of pumpkins as employed as a remedy against tape-worms, by M. E. Heckel.—On the post-tertiary fauna of the caves of Baoussé Roussé in Italy, commonly called grottoes of Mentone, by M. E. Rivière.

BOOKS AND PAMPHLETS RECEIVED

BRITISH.—A Yachting Cruise in the South Seas: C. F. Wood (H. S. King and Co.).—Transactions of the Watford Natural History Society, Vol. i. Part 1.—Rotomahana, and the Boiling Springs of New Zealand, by D. L. Mundy and Ferd. von Hochstetter (Low and Marston).—Journal of the Anthropological Institute, Vol. iv. Part 2; Vol. v. Part 1.—Snicland, or Iceland; its Jokulls and Fjalls: W. L. Watts (Longmans).—Protection of Life and Property from Lightning: W. McGregor (Bedford, Robinson).—Game Preserves and Bird Preservers: G. F. Morant (Longmans).—Geology: James Geikie (Chambers).—Magnetism and Electricity: John Cook (Chambers).—Chemistry: A. Crum-Brown (Chambers).—Astronomy: A. Finlatter (Chambers).—On the Relation between Diabetes and Food: Dr. Donkin (Smith, Elder and Co.).—Impressions of Madeira: Wm. Longman (Longmans).—Light as a Motive Power: Lieut. R. H. Ainet, Vol. i. (Trübner).—Rambles in Search of Shells: J. E. Harting (Van Voorst).—Syllabus of Plane Geometry (Macmillan and Co.).—Instructions in the Use of Meteorological Instruments: Rout. H. Scott, M.A., F.R.S. (Official).—Quarterly Weather Report of the Meteorological Office, Part 4, 1873 (Official).—Second Report on the Sanitary Condition of Oxfordshire: G. W. Child (Longmans).

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